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Research - 347
Spruce Budworm

4500 March 14, 1961

Dr. George T. Harvey
Forest Insect Laboratory
Box 490
Sault Ste. Marie, Ontario
Canada.

Dear Dr. Harvey:

Reference is made to your letter of March 1 requesting our ideas on the possibility of the two-year cycle spruce budworm occurring in northwestern United States. This subject also was casually discussed in a conversation between Carolin and Dr. B. McGugan at the Western Forest Insect Work Conference in Berkeley, California, during March 1-3, 1961.

During past control programs, assumptions have been made on the basis of advanced larval development at higher altitudes that the two-year cycle existed in this region. During our research studies, positive evidence of an "unadulterated" two-year form has not been found. However, during 1950, a smattering of the two-year form was reared in combination with the one-year form from Douglas-fir limb and bole samples collected at relatively low elevations near Union, Oregon. To be certain that the fourth and fifth instar larvae recovered had not reached this stage of development by feeding, our men closely examined the material in all boxes for foliage before discarding it.

There is one record of other researchers finding the two-year cycle in this region. Dr. Ray Underhill of Walla Walla College told us that he recovered large spruce budworm larvae overwintering on the boles of subalpine fir near Tollgate, Oregon, during the winter of 1949-50. There is no way to estimate the extent of the area that may have been involved. The area was sprayed during the summer of 1950. In an adjacent area of similar elevation, collections during 1951 yielded full-grown spruce budworm larvae and pupae. Therefore, we would have to conclude that the two strains were mixed in this area.

At present spruce budworm populations in eastern Oregon are at an extremely low level. There appears to be no opportunity to collect the two-year form, even if it occurs in admixture with the one-year form.

So far as variations in the one-year form are concerned, and the opportunities for collecting, this information was conveyed to Dr. McGugan at the Western Forest Insect Work Conference. We trust that it has been conveyed to you.

Very truly yours,

R. W. COWLIN, Director

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By: R. L. FURNISS, Acting

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